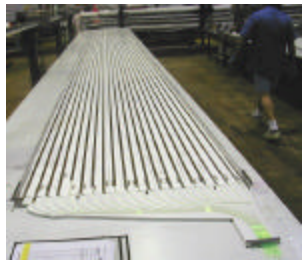
Scintillator Options for a 50 KTon Off-Axis Neutrino Detector - Overview

Ken Heller – University of Minnesota

- **Why Scintillator?**
  - **Many examples of large detectors**
    - **Good performance – over long times**
    - **Proven calorimetry and tracking**
    - **Construction experience and costing**
    - **Minimal care needed**

95% complete !

  - **Industry driven improvements in photonics and electronics**
  - **Flexible Parameters make optimization possible**
    - **Width, length, thickness, shape**



Talks as a Guide for Discussion

- **Costing the Strawman Design at SLAC Workshop**
  - **B. Choudhary given by D. Michael**

  The 20 KTon design scaled up to 50 KTon with more detailed costing

  $50M (20 KT) to $100M (50KT)

  IIT to M64

- **Structural Issues**
  - **J. Nelson**

  New constructible solid scintillator design – size constraints determined by light yields (LM) and photodetector/electronics (KH)

  10 m to 12 m

- **Solid Scintillator System**
  - **L. Mualem**

  Scintillator strip design based on measured light yields

- **Detector Construction**
  - **J. Nelson**

  An installation model for a scintillator detector and its cost
- **Scintillator Readout**
  - **R. Rusack as given by K. Heller**

  Three solutions to photon read out – M64, II, APD
- **Liquid Scintillator**
  - **K. Heller**

  Liquid scintillator as a replacement for solid scintillator
- **Costing & Summary**
  - **J. Nelson**

  Cost comparisons and optimization paths – Time for discussion